



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

MAR 25 1998

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, Kansas 67504-1839

RE: UIC MINOR PERMIT MODIFICATION
Conversion of Additional Well to
Antelope Creek Waterflood
EPA Area Permit UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Your letter of March 11, 1998, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000 is hereby granted.

<u>NAME</u>	<u>LOCATION</u>	<u>EPA WELL PERMIT NO.</u>
Ute Tribal #06-16	SE/SE Section 6 T 5 S - R 3 W Duchesne County, UT	#UT2736-04436

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by minor permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Minor Permit Modification, all terms and conditions of the original permit will apply to the construction, operation, monitoring, and plugging and abandonment of this additional injection well. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

- (1) The conversion of this production well has been reviewed, and found satisfactory, therefore, no corrective action is required.



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RE: UIC M
Conve
Antel
EPA A
Duche

*Scan under
UT 20736 - 00000
modification - Minor
Mod approved
3/25/1998.
Will need to link
with UT 20736 - 04436
in new database also
under 81 Add Well to
Area Permit.*

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- (2) **Maximum injection pressure (Pmax)** - the permittee shall limit the maximum surface injection pressure (Pmax) to 2125 psig. Permit provision have been made that allow the operator to request an increase or decrease in the injection pressure.

The calculations for the fracture gradient was estimated from instantaneous shut-in pressures (ISIP) observed during fracturing treatments performed on five (5) individually fraced zones within the Ute Tribal #06-16 well. The lessor of the five ISIP's was used to calculate the theoretical maximum allowable surface injection pressure as shown below:

$$P_{max} = [F_g - 0.433 (S_g)] d$$

Where: P_{max} = Maximum surface injection pressure at wellhead

d = 4040' shallowest perforations after conversion

S_g = Specific gravity of injected water

$$P_{max} = [0.96 - .433 (1.00)] 4040$$

$$P_{max} = 2125 \text{ psig}$$

Until such time as the permittee demonstrates that a fracture gradient other than 0.96 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure (P_{max}) for this well will be 2125 psig.

- (3) The plugging and abandonment plan and schematic, submitted by your office, has been reviewed, and approved.

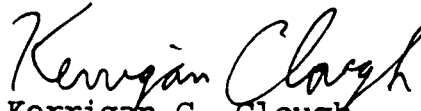
Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received separate written authorization to inject by the Environmental Protection Agency. In summary, these requirements for your newly permitted injection well are:

- (1) All conversion is complete and the permittee has submitted a completed Well Rework Record (EPA Form 7520-12).
- (2) The pore pressure has been determined.
- (3) The well has successfully completed and passed a mechanical integrity test (MIT); EPA form enclosed.

All other provisions and conditions of the permit remain as originally issued.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing MAIL CODE 8P2-W-GW. Thank you for your continued cooperation.

Sincerely,



Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

Enclosure: EPA Form

cc: Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

MINOR PERMIT MODIFICATION -- ROUTING SLIP

Date: 3/25/98

	TO		INIT	DATE
1.	ORIGINATOR <u>Chuck Williams</u>	8P2-W-GW	<u>CEW</u>	<u>3/25/98</u>
2.	TECHNICAL REVIEW - <input type="checkbox"/> CT <input checked="" type="checkbox"/> BM <u>BM</u>	8P2-W-GW	<u>[Signature]</u>	<u>3/25/98</u>
3.	PROOF READ - <u>LAURA C.</u>	8P2-W-GW	<u>LC</u>	<u>3/25/98</u>
4.		8P2-W-GW		
5.	DAVE HOGLE - CONCUR	8P2-W-GW	<u>[Signature]</u>	<u>3/25/98</u>
6.	STEVE TUBER - CONCUR	8P2-W		
7.	KERRY CLOUGH - SIGNATURE	8P2	<u>KC</u>	<u>3/25/98</u>
8.	ORIGINATOR - COPIES <u>CHUCK W.</u>	8P2-W-GW	<u>CEW</u>	<u>3/26/98</u>
9.	JACKIE LEE - TRACKING	8P2-W-GW	<u>✓</u>	<u>3/26/98</u>
10.	LAURA CLUTTS - MAIL		<u>LC</u>	<u>3/26/98</u>

WELL NAME: Ute Tribal #06-16

PERMIT NUMBER: UT2736-04436

APPLICANT: Petroglyph Op. Co.

Contents of Package

Left Side:

UIC Minor Modification SOP
UIC Program Tracking
Operating Conditions Checklist
Cover Letter (Concurrence)
Cover Letter (Reading File)

Right Side:

Cover Letter (Sign)
Minor Modification (Sign)

COMMENTS: Add New Well to AREA PERMIT UT2736-00000

Originator: Chuck Williams

MAR 25 1998

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, Kansas 67504-1839

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CEW
8P2-W-GW
3/25/98

8P2-W-GW
3/25/98
mailed
3/26/98

8P2-W-GW
UP Monahan
3/25/98

High
8P2-W-GW
3/25/98

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Sincerely,
Original signed
Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State & Tribal Assistance
Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

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cc: Mr. Ronald Wopsock, Chairman
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BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

FCD: March 25, 1998, Chuck W., chuck

3/26/98 CW 3259C (74th Tri-Rec) #06-16)

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504-1839

4a. Article Number
P 213 403 764

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
MAR 30 1998

5. Received By: (Print Name)
Kristine L. Brown

6. Signature: (Addressee or Agent)
Kristine L. Brown

8. Addressee's Address (Only if requested and fee is paid)
(see 26)
APR 1 1998

PS Form 3811, December 1994

Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

P 213 403 764

3/26/98 CW 3259C

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to
Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504-1839

Certified Fee \$

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered

Return Receipt Showing to Whom, Date, & Addressee's Address

TOTAL Postage & Fees \$

Postmark or Date

PS Form 3800, April 1995